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10/069,007	07/30/2002	Mikiko Sodeoka	Q68625	4541

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EXAMINER	
WRIGHT, SONYA N	

ART UNIT	PAPER NUMBER
1626	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,007	SODEOKA ET AL.	
	Examiner	Art Unit	
	Sonya Wright	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *0104* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Deborah C. Lambkin for Joseph McKane

DETAILED ACTION

Claims 1-17 are pending in this application.

Election/Restrictions

Applicant's election of compounds 7-12 and 17 on page 24 and Group V in the paper filed 12-8-03 is acknowledged. Reasons for traversal have not been provided, therefore the election is considered to be without traverse.

In view of Applicant's election, the following generic embodiment as depicted in claim 1 is identified for examination: R1 represents an unsubstituted alkyl group; R2 represents an unsubstituted alkyl group; R3 represents hydrogen; and R4 represents an alkyl- or arylsulfonyl group which may be substituted, an alkoxyl group which may be substituted, an aryloxy group which may be substituted, an alkyl- or arylthio group which may be substituted, a hydroxyl group, or an amino group which may be substituted.

Claim Objections

Claims 1-17 are objected to for containing non-elected subject matter. It is suggested that Applicant limit the claims to the generic embodiment that has been identified for examination (supra).

Withdrawn Claims

Claims 1-17 in part are withdrawn from further consideration under 37 CFR 1.142(b) as constituting other patentably distinct inventions, due to the presence of non-elected subject matter.

The withdrawn subject matter of claims 1-17 is properly restricted as said subject matter differs in structure and element from the elected subject matter so as to be

patentably distinct therefrom, i.e. a reference which anticipated the elected subject matter would not even render obvious the withdrawn subject matter and fields of search are not co-extensive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over STN International ® CAPLUS Database, Accession No. 1991:656019 (WO 9113070) Schultz et al..

Determination of the scope and content of the prior art (MPEP §2141.01)

Applicant claims a (1H-indol-3-yl)-2,5-dioxo-1H-pyrrol-3-yl compound which is useful in treating diseases such as autoimmune myocarditis and acquired immunodeficiency syndrome. Shultz et al. disclose a (1H-indol-3-yl)-2,5-dioxo-1H-pyrrol-3-yl compound which is useful as an immunotherapeutic agent. See the abstract in the STN display.

Schultz et al. generically teach the instant compound in the STN abstract. Schultz et al. teach species which are similar to the instant compounds, see RN 137291-00-0, RN 137291-01-1, RN 137291-05-5, RN 137291-09-9, and RN 137291-11-3. Shultz et al. generically teach the instant compounds when, in the instant compounds, R1 is alkyl, R2 is alkyl, R3 is hydrogen, and R4 is an alkoxy group or an amino group substituted by alkyl and benzyl.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

The difference between Shultz et al. and the instant compounds is that in the instant claims R2 is unsubstituted alkyl, however, in Shultz et al. the moiety corresponding to R2 of the instant claims is hydrogen.

Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)

However, it is well established that the substitution of methyl for hydrogen on a known compound is not a patentable modification absent unexpected or unobvious results. In re Wood, 199 U.S.P.Q. 137 (C.C.P.A. 1978) and In re Lohr, 137 U.S.P.Q. 548, 549 (C.C.P.A. 1963). The motivation to make the claimed compounds derives from the expectation that structurally similar compounds would possess similar activity (e.g. usefulness in treating immunological disorders).

Further, Shultz et al. teach homologs of the instant compounds.

To those skilled in chemical art, one homolog is not such an advance over adjacent member of series as requires invention because chemists knowing properties of one member of series would in general know what to expect in adjacent members. In re Henze, 85 USPQ 261 (1950). The instant claimed compounds would have been obvious because one skilled in the art would have been motivated to prepare homologs of the compounds taught in the reference with the expectation of obtaining compounds which could be used in treating immunological disorders. Therefore, the instant claimed compounds would have been suggested to one skilled in the art.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable

one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1404 (CAFC, 1988)):

1) Nature of invention.

2) State of prior art.

3) Level of ordinary skill in the art.

4) Level of predictability in the art

5) Amount of direction and guidance provided by the inventor.

6) Existence of working examples.

7)Breadth of claims.

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

1) Nature of the invention.

Claims 2-17 are directed to a drug for treating or preventing "progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . Claim 11 is drawn to "a drug for treating or preventing disorders or side effects, through inhibiting cell death, or disorders due to radiation or drugs".The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with this claim.

2) State of the prior art.

The prior arts do not indicate that the instant compound is useful in "preventing all diseases caused by progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . .". The prior arts do not indicate that the instant compound is useful in treating or preventing all disorders or side effects, through inhibiting cell death, that result from any drug.

3) Level of ordinary skill in the art.

The level of skill in the art is high. Due to the unpredictability in the pharmaceutical art, it is noted that each embodiment of the invention is required to be individually assessed for physiological activity by in vitro and in vivo screening to determine which compounds exhibit the desired pharmacological activity and which diseases would benefit from this activity.

Thus, the specification fails to provide sufficient support of the broad use of the compound of the claim 1 for preventing progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . and for use in treating or preventing disorders or side effects, through inhibiting cell death, of disorders due any drugs.

Genentech Inc. v. Novo Nordisk A/S (CAFC) 42 USPQ2d 1001 , states that " a patent is not a hunting license. It is not a reward for search , but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling

disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

4) Level of predictability in the art.

The instant claimed invention is highly unpredictable as discussed below:

It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In re Fisher, 427 F.2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. Hence, in the absence of a showing of "preventing" progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . by the compound of claim 1, one of skill in the art is unable to fully predict possible results from the administration of the compound of claim 1 due to the unpredictability of the art pertaining to progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . .

The nature of pharmaceutical arts is that it involves screening *in vitro* and *in vivo* to determine which compounds exhibit the desired pharmacological activities. There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face.

5) Amount of direction and guidance provided by the inventor.

Applicant provides limited guidance regarding the use of the instant compound in "preventing" progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . and the use of the compound in treating or preventing disorders or side effects, through inhibiting cell death, that result from any drugs. Applicant provides limited information on the usefulness of the instant compound in inhibiting effects on apoptosis of porcine ovarian granulose cells by SNP stimulation in page 27.

The guidance is limited because various forms of progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . have different causative agents, involve different cellular mechanisms, and, consequently, differ in treatment protocol.

6) Existence of working examples.

Applicant provides limited working examples of how the instant compound is used on page 27, Table 2. The limited examples do not provide sufficient evidence to support a claim drawn to preventing all forms of progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . . Nor do the examples provide sufficient evidence to support a claim drawn to treating or

preventing disorders or side effects, through inhibiting cell death, that result from any drugs.

7) Breadth of claims.

Claims 2-17 are extremely broad due to the large number of diseases encompassed by progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), . . ., and because of the large number of "drugs" (see line 2 of claim 11.) Applicant has not provided sufficient evidence to support a claim drawn to preventing all forms of progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic lateral screrosis (ALS), ...

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not use the claimed invention without undue experimentation.

In view of the Wands factors and In re Fisher (CCPA 1970) discussed above, to practice the claimed invention herein, a person of skill in the art would have to engage in undue experimentation to test how the instant compound is useful in the prevention of progress of symptoms through inhibiting death of neurons, or neurodegenerative diseases such as Alzheimer's disease, spinal muscular atrophy (SMA), amyotrophic

lateral screrosis (ALS), . . ., and in treating or preventing disorders or side effects, through inhibiting cell death, that result from any drugs, with no assurance of success.

These rejections can be overcome by Applicant deleting the phrase "or preventing" in claims 2-17. Further, in claim 11, Applicant should delete the phrase "or drugs".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-17 contain the open-ended term "comprising". However, compound claims should not have open-ended terms such as "comprising". It is suggested that Applicant delete "comprising" in claim 1 and insert –consisting of--.

It is not clear whether Applicant intends for claims 2-17 to be compound or composition claims. If Applicant intends for claims 2-17 to be composition claims, it is suggested that Applicant rewrite claims 2-17 in the proper form for composition claims. If Applicant intends for any of claims 2-17 to be compound claims, it is suggested that Applicant delete "comprising" and insert –consisting of— in the compound claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Wright, whose telephone number is (703) 308-

4539. The examiner can normally be reached on Monday-Friday from 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (703) 308-4537. The Unofficial fax phone number for this Group is (703) 308-7922. The Official fax phone numbers for this Group are (703) 308-4556 or 305-3592.

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Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [joseph.mckane@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via Internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-1235.

Joseph K. McKane

Supervisory Patent Examiner

Group 1600

Sonya Wright

January 23, 2004